

Our Ref.: JBS-38-PCT-US

English translation of Amendment under PCT Article 34

PCT/JP2003/009096

Claims (PCT 34 article amendment)

1. A sputtering target comprising:  
a material containing silicon carbide and silicon  
5 wherein a volume ratio of the silicon carbide ranges from about 50% to about 70% when a volume ratio of silicon carbide equals the entire volume of silicon carbide/ (the entire volume of silicon carbide + the entire volume of silicon)  $\times 100$ .
- 10 2. The sputtering target as claimed in claim 1 wherein the volume ratio of the silicon carbide is about 55% to about 65%.
3. The sputtering target as claimed in claim 1 or 2 wherein the material containing silicon carbide and silicon is prepared  
15 by a reaction sintering method.
4. The sputtering target as claimed in any one of claims 1, 2 and 3 wherein a weight ratio of impurities contained in the silicon is about 0.01% or less.
- 20 5. (New) The sputtering target as claimed in any one of claims 1 to 4 wherein a volume resistivity of a covering layer is about  $3.0 \times 10^3 (\Omega \cdot \text{cm})$  or less.
- 25 6. (New) The sputtering target as claimed in any one of claims 1 to 5 wherein the silicon carbide is a powder comprising, a mixture of a silicon carbide powder having a most frequent grains

of about 1.7 to about 2.7  $\mu\text{m}$  and a silicon carbide powder having most frequent grains of about 10.5 to about 21.5  $\mu\text{m}$  is used.

7. (New) A method for manufacturing a sputtering target

5 comprising:

(1) dissolving or dispersing a silicon carbide powder and a carbon source into a solvent to provide a mixed powder in a slurry form,

10 (2) pouring the resulting mixed powder into a mold and drying the same to obtain a green material,

(3) calcinating the resulting green material at about 1200 to about 1800°C under a vacuum or inert gas atmosphere to obtain a calcined material, and

15 (4) impregnating the resulting calcined material with molten metallic silicon by capillary action to react free carbon in the calcined material with the silicon aspirated into the calcined material due to the capillary action phenomenon thereby obtaining a silicon carbide material.